DOCUMENT RESUME

ED 227 277 CE 035 304

| | |
|---|---|
| AUTHOR | Bates, Paul E.; And Others |
| TITLE | Behavior Management. Technical Assistance Services: Illinois Special Needs Populations. |
| INSTITUTION | Illinois State Univ., Normal. |
| SPONS AGENCY | Illinois State Board of Education, Springfield. Dept. of Adult, Vocational and Technical Education. |
| PUB DATE | Sep 82 |
| NOTE | 33p.; For related documents, see ED 206 836-839 and CE 035 303. |
| PUB TYPE | Guides - Non-Classroom Use (055) -- Information Analyses (070) |
| EDRS PRICE | MF01/PC02 Plus Postage. |
| DESCRIPTORS | Adolescents; Behavioral Objectives; Behavior Change; *Behavior Modification; Behavior Problems; Behavior Standards; *Disabilities; Guidelines; Job Training; *Mainstreaming; *Performance Contracts; Postsecondary Education; *Problem Children; Rehabilitation; Secondary Education; Social Reinforcement; Special Education; Teaching Methods; *Vocational Education |
| IDENTIFIERS | Illinois |

ABSTRACT

Behavior management involves both the encouragement of social behavior and the reduction of inappropriate behavior. Initially, teaching efforts should be directed at identifying socially acceptable alternatives. If these efforts are unsuccessful, additional procedures that are specifically directed at the inappropriate behavior may be warranted. Essential components of all behavior management programs include behavioral definitions, measurement procedures, reinforcement procedures, reinforcement for alternative behaviors, specific program procedures, and a mechanism for monitoring and evaluating program results. When reductive procedures are necessary, the least intrusive and most positive approach should be tried prior to considering more aversive methods. The behavior contract is highly recommended as a program component that assures student involvement and clarification of all program procedures. (This booklet provides basic information and practical ideas for implementing behavior management among special needs vocational education students. A reference list, glossary, and an annotated bibliography are included in the guide.) (KC)

**********
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
**********

ED227277

**Behavior Management**

**Illinois State Board of Education**

Edward Copeland
Chairperson

Donald G. Gill
State Superintendent
of Education

**Department of Adult, Vocational and Technical Education**

Research and
Development Section

September, 1982

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

This document has been reproduced as received from the person or organization originating it.

Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

C Ruisinger

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

**Developers:**

Paul E. Bates, Ph.D.

Sue Ann Morrow, Ed.S.

Jeff Anderson, M.Ed.

Southern Illinois University
Carbondale, Illinois

Ernie Pancsofar, Ph.D.

Bowling Green State University
Bowling Green, Ohio

**Project Staff:**

Catherine Batsche, Ph.D.

Toni McCarty

Barbara Tipsord

Illinois State University
Normal, Illinois

CE 035 304

# TECHNICAL ASSISTANCE SERVICES: ILLINOIS SPECIAL NEEDS POPULATIONS

**Behavior Management**

Behavior Management was developed by Paul Bates, Ph.D., Sue Ann Morrow, Ed.S., Jeff Anderson, M.Ed., Department of Special Education, Southern Illinois University-Carbondale and Ernie Pancsofar, Ph.D., Bowling Green State University, Bowling Green, Ohio through a contractual funding agreement with the Illinois Board of Education, Department of Adult, Vocational and Technical Education.

The material has been selected for dissemination through the TECHNICAL ASSISTANCE AND DISSEMINATION NETWORK FOR SPECIAL NEEDS POPULATIONS. The Dissemination Network was developed pursuant to a funding agreement with the Illinois State Board of Education, Department of Adult, Vocational and Technical Education/Research and Development Section, 100 North First Street, Springfield, Illinois, 62777. Opinions expressed in this document do not necessarily reflect, nor should they be construed as, policy or opinion of the State Board of Education or its staff.

STATE BOARD OF EDUCATION
Edward Copeland, Chairperson
Donald G. Gill
State Superintendent of Education

ILLINOIS STATE UNIVERSITY
Dissemination Center
Turner Hall 205
Normal, Illinois 61761
309-438-3627

## INTRODUCTION

Educators have always been concerned about managing the behavior of regular and special needs students. Behavior management refers to methods that are used to encourage prosocial behavior and discourage inappropriate behaviors. In this paper, emphasis is placed on techniques that have proven useful in decreasing inappropriate behaviors and establishing socially acceptable alternatives. Management problems that are commonly encountered in public school settings include absenteeism, tardiness, noncompliance, bizarre and stereotypical behaviors, verbal aggression, and physical aggression. Although some people associate these problem behaviors with special needs students, this characterization is largely unfair. Since these inappropriate behaviors may be present in all students, the management procedures suggested in this monograph are intended to be of use with regular education and special needs individuals.

The primary role of the vocational educator is to establish career/vocational competencies and to encourage socially appropriate behavior. However, with certain students and particular behavior problems systematic efforts to increase an individual's overall competence must be conducted concurrently with behavior management programs designed to reduce inappropriate behaviors. These reductive behavior management procedures are necessary when the problematic behaviors are (a) dangerous to oneself or others, (b) seriously threaten a person's continued involvement in classroom activities, and (c) occur at such a high frequency or duration that is extremely difficult to engage the person in more productive activities. In this section, guidelines will be suggested for developing and implementing behavior management programs with special need students in vocational education classes. Specifically, guidelines are suggested for the following aspects of program development and implementation:

1. Identifying problem behaviors requiring intervention.
2. Defining behaviors.
3. Using an appropriate measurement procedure.
4. Selecting and implementing behavior change procedures.
5. Monitoring and evaluating program.

The material presented in this monograph is intended to provide an introduction to behavior management. For more specific information on measurement and program procedures, the reader is encouraged to use the reference section to obtain more indepth resources. With severe management problems, additional professional assistance should be requested.

### Identifying Problem Behaviors

The first step in behavior management is the identification of the specific behavior(s) that require modification. Since a behavior management program may require extra time to develop and implement, the decision to intervene should be directly related to the importance attributed to changing the target behavior. According to Sulzer-Azaroff and Mayer (1977), a reasonable way to decide when a problem

behavior requires intervention is when one or more of the following events occur: (a) several independent requests for assistance are made with the same individual, (b) the person is behaving differently than other comparison groups, and (c) there have been dramatic changes in the person's behavior. Other considerations that may need to be made prior to proceeding with the development of a behavior management program are: (a) the success of informal solutions to be problem, (b) administrative support for the program, (c) familiarity of staff with behavioral techniques, and (d) the availability of support personnel. If there is compelling evidence that a problem exists and there is sufficient support for more formal behavior management approach, the next step in the program development is to operationally define the target behavior(s).

### Defining Behaviors

A key to every successful behavior management program is the specificity by which the target behavior is defined. In this definition, all terms must be operationalized so that objective measurement is possible. For example, non-compliance is often mentioned as a difficult behavior to manage in school and work settings. Non-compliance may include a variety of behaviors such as refusal to follow specific directions and failure to respond quickly to requests. In formulating a behavior management program, the specific non-compliant behavior(s) of interest must be operationally defined to promote accurate measurement and consistent program implementation. Simply stating that the "student does not follow directions" is usually insufficient. A more specific definition, such as "when given an instruction, the student fails to respond within 30 seconds" would make it easier for teachers to carry out a behavior management procedure more effectively. Failure to specifically define problem behaviors will result in errors of measurement and inconsistent program implementation.

One method for evaluating the usefulness of an operational definition is to assess the degree of agreement obtained by two observers who independently witness the same behavior. If there is high interobserver agreement (90% or better) a conclusion can be made that the behavior has been adequately defined. Techniques to determine interobserver agreement are referred to as reliability checks. For further information on reliability procedures and other behavior management techniques, the reader is referred to Sulzer-Azaroff and Mayer's 1977 text titled *Applying Behavior Analysis Procedures with Children and Youth.*

### Measurement Procedures

After the target behavior has been clearly defined, a measurement procedure must be selected and repeated observations conducted. These repeated observations need to be conducted prior to program implementation (baseline)and then periodically repeated during a program to evaluate effectiveness. Several measurement procedures have been used in school settings, including the following:

1. Sequential-event recording (continuous).
2. Frequency recording.
3. Duration recording.
4. Interval recording.

Each of these measurement procedures is described and example data sheets are provided. In some cases, cooperative teaching arrangement will be necessary to collect detailed assessment information.

**Sequential Event Recording (ABC)**

With this method, the teacher writes a narrative description of the events that occur before and after a specified behavior. These written observations are recorded on a 3-column sheet. This method leaves room for recording the antecedents (A), behaviors (B), and consequences (C). Frequently this method is referred to as ABC recording.

This recording method is used to assist the teacher identify events that usually precede a particular behavior or set of behaviors. Furthermore, through this method it may be possible to identify reinforcers that are maintaining or strengthening behavior problems. If specific antecedents or consequences are frequently associated with problem behaviors, simple changes in either of these areas may result in an economical way to change behavior.

In Figure 1, an example of a sequential-event recording form is presented. From these data, the vocational educator is provided with information from which behavior management decisions can be made.

**Frequency Recording**

Frequency refers to the number of times a behavior occurs. This method of recording is appropriate for discrete behaviors that are of moderate to low frequency and are similar in length of occurrence. Discrete behaviors are those events that have a distinct beginning and end. For example, hits, obscene gestures, and hand raising are all discrete behaviors that can be counted. Since the significance of a behavior's frequency is often determined by the length of observation period, a rate per minute or rate per hour figure is often computed. This makes it possible to compare frequency of a behavior across different length time periods. An example data sheet for frequency recording is presented in Figure 2.

Frequency recording is probably the most commonly used observation procedure in classroom settings. However with high rate behaviors and in situations where continuous attention may be problematic, alternative recording procedures are required. Interval recording provides such an alternative. Following a discussion of duration/latency recording, this alternative is described.

**Duration/Latency Recording**

In many instances the length of time a behavior lasts (duration) or the amount of time it takes for someone to initiate an activity (latency) is the critical factor of interest. Example behaviors in which duration is of importance include the amount of time a student remains seated, length of time on tasks, and the time it takes for the student to complete an assignment. To appropriately use this procedure, the initiating and terminating time of behavior are recorded and duration is calculated by subtracting the initiating time from the terminating time.

In certain cases latency of a behavior is of primary importance. Latency refers to the interval between the onset of a task demand and the occurrence of the appropriate behavior. Examples include length of time it takes for a person to comply to an instruction, length of time between assignments, and interval of time between the sounding of the class bell and the person s response of being seated. Latency of responding is determined by recording the time of task demand and the occurrence of the appropriate behavior. An example data recording form for duration and latency is presented in Figure 3.

Duration recording yields a very precise measurement of a behavior's length or

Student: Jeff K. Class: Welding
Observer: Betty W. Date(s): 11/10/82

| ANTECEDENT | BEHAVIOR | CONSEQUENCE |
|---|---|---|
| 1. Teacher verbally reprimanding another student for talking out. | Jeff begins talking out | Teacher and peers attend to Jeff's talking out. |
| 2. Teacher working independently with another. | Jeff shouts out that he needs help. | Teacher goes over to help him |
| 3. Teacher returns to former student and begins working. | Jeff waves his paper in the air and shouts, "Is this right" | Teacher returns to Jeff and helps him |



Figure 1 ABC Recording form

Frequency Data Recording

STUDENT: Tom W. CLASS: Small Engine Repair (8:00-9:00 daily)

OBSERVER: Sue M. DATE(S): 11/16/82

| Date | Begin Time | End Time | Behavior of Interest | Frequency Tally | Total Frequency | Total Minutes | Rate Per Minute |
|---|---|---|---|---|---|---|---|
| 11/16/82 | 8:15 | 9:00 | Coming To Instructors Desk | 𝍸 𝍸 \|\| | 12 | 45 | .267 |
| 11/17/82 | 8:00 | 9:00 | Coming To Instructor's Desk | 𝍸 𝍸 \|\|\|\| | 14 | 60 | .233 |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

Figure 2 Frequency Data Form

latency of response. This method is particularly well suited for behaviors with easily determined starts and stops. However, since a timing device is necessary and continuous observations may be required, observation of more than one student at a time may be difficult. In some of these instances, interval recording has been suggested as an alternative.

Duration Data Recording

STUDENT: Mary B. CLASS: Accounting I 1:00 - 2:00 daily

OBSERVER: Cheryl K. DATE(S): November 26, 1982

| Date | Data Collection Time | | Total Time | Duration of Time | Total Percentage |
|---|---|---|---|---|---|
| | Start | Stop | | Out of Seat | Duration of Ob. Period |
| 11-26 | 1:15PM | 1:55PM | 40M | 12M | 30% |
| 11-27 | 1:05PM | 1:55PM | 50M | 17M | 34% |
| 11-28 | 1:05PM | 1:45PM | 40M | 15M | 37% |

Figure 3 Duration Data Form

## Interval Recording

With interval time sampling, an observation period is divided into a series of equal time intervals. The observer then records an occurrence or nonoccurrence of the target behavior for each time interval. Interval time sampling is used for one or more of the following reasons: (a) requires less effort than continuous observation procedures such as frequency or duration recording, (b) results in reasonably accurate duration and frequency data, (c) does not require definition of discrete behaviors, and (d) applicable to a wide variety of behaviors. Sulzer-Azaroff and Mayer (1977) describe three variations of interval time sampling. There are *whole interval time sampling, partial interval time sampling,* and *momentary time sampling.*

*Whole interval time sampling* requires the recording of a response (+) only when it occurs throughout the entire observation interval. This procedure should only be used for behaviors that are expected to occur for long periods of time without interruption. An example behavior that could be appropriately measured by this procedure is staying in-seat. A potential drawback to this recording procedure is that it requires continuous observation throughout each interval.

Another interval recording procedure is *partial interval time sampling.* In this measurement procedure, a response is recorded as an occurrence when a single instance of the behavior is observed in the interval. This technique is appropriate for behaviors that are very brief in duration and/or occur in fleeting moments (e.g. swearing, obscene gestures, abusive behavior, etc.). An economical advantage of this technique is that as soon as one instance occurs, the teacher does not need to maintain observation of the student for the remainder of the interval and does not need to count every instance of the behavior.

For behaviors that persist for lengthy periods of time and/or occur quite frequently, *momentary time sampling* may provide a reasonably accurate and economical observation method. With this procedure the student is observed at the

exact moment a time interval ends. If the student is engaging in the behavior at that moment, a (+) is recorded; if not, a (-) is recorded.

Examples of behaviors commonly observed by this method are attending to task and in-seat behavior. The major advantage of this procedure is that the observer need not continuously watch the student. Since observation is only necessary at specific time periods, the teacher is free to do other things during the interval. With fairly long intervals, it is possible for the teacher to maintain consistent measurement with minimal disruption in his/her other activities.

In Figure 4 the reader is provided with a sample data sheet for interval time sampling recording. This data sheet is appropriate for all three interval techniques that were presented above.

STUDENT: Sally A. TEACHER: B. Phillips

CLASS: Child Care I DATE(S) 11-12-82 to 12-2082

Time Sample

| Date | Code | Start Time | Intervals * | | | | | | | | | | Event Total | Total Time | Per Cent |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 11/12 | + − | 9:10 | + | + | − | + | + | − | − | + | + | − | 6 | 10 | 60% |
| 11/14 | | 9:10 | + | + | + | − | + | + | + | − | + | − | 7 | 10 | 70% |
| 11/15 | | 9:10 | + | + | + | + | − | − | + | + | + | + | 8 | 10 | 80% |
| 11/18 | | 9:10 | + | + | − | − | + | + | + | + | + | + | 8 | 10 | 80% |
| 11/19 | | 9:10 | + | + | + | + | − | + | − | + | + | + | 8 | 10 | 80% |
| 11/21 | | 9:10 | + | − | + | + | + | + | + | + | + | + | 9 | 10 | 90% |

Code: + = scratching observed; − = no scratching observed

Comments:

Figure 4 Interval Data Form

## Behavior Management Procedures

There are several important considerations that must be made when selecting behavior management procedures. Foremost in the process of behavior management is the prevention of behavior problems by planful environmental arrangements and establishment of alternative social skills. However, when management problems persist, these prevention effects must be supplemented with efforts that are designed specifically to reduce inappropriate behavior. Initially, informal reductive approaches (e.g., talking with the student) should be attempted prior to implementation of more formal procedures. When more formal intervention is required, teachers should select the least intrusive procedure for which there is evidence of effectiveness.

In this section, several behavior management approaches are suggested. These approaches consist of procedures to prevent problem behaviors plus interventions that are designed to reduce inappropriate behaviors. Specifically these procedures include environmental arrangements, instruction of alternative social skills, reinforcement of alternative behaviors, response cost, time-out, and self-management. Finally, behavioral contracting is suggested as a valuable method by which all behavior management approaches can be formalized.

### Antecedent Arrangements

The best approach to managing the behavior of special needs students is to prevent inappropriate behaviors. As a first step toward prevention of problem behaviors, the classroom environment needs to be established as a positive place. A positive atmosphere can be promoted in several ways, including the following:

1. Make classroom physically accessible.
2. Adapt materials and equipment so that all students can participate.
3. Remove attitudinal barriers by encouraging acceptance of all students.
4. Establish individualized behavioral objectives that are realistically attainable.
5. Frequently reinforce students for appropriate behavior.

If a classroom and necessary equipment (e.g., drafting tables, kitchen appliances) are not physically accessible, the student may be receiving an unintended message that he/she is not wanted in the program. Attitudinal barriers in the form of social isolation and rejection by peers and instructors can be even more devastating. In such situations, it is not surprising that behavior management problems are likely to occur. However, by eliminating these physical and psychological barriers, the classroom environment is more positive and conducive to socially appropriate behavior.

Individualized behavioral objectives are also important in the education process. If objectives are too complex, students are likely to fail and if objectives are simple, they may become bored. Failure and boredom are conditions in which behavior management problems are likely to occur. By individualizing these objectives, success and interest of students are enhanced, and consequently behavior problems are reduced.

Finally, there is no substitute for positive reinforcement of students for effort and individualized accomplishments. Teachers should attempt to deliver positive reinforcing statements to all students on a regular basis. These teacher behaviors help to establish a positive atmosphere and increase teacher effectiveness in all areas.

### Teach Social Skills

In many cases, a behavior management problem is the result of a skill deficit in the

social skills area. One problem that will serve as an example involved a young man who was placed in a work experience program. When this individual needed to call off work, he telephoned the business and bluntly stated, "I ain't coming!" and then hung up. One interpretation of this person's behavior might be that he was beligerant, apathetic toward work, hostile, etc. Another view of this behavior was that the young man did not know how to call off work appropriately; he simply lacked the social skills necessary to inform his employer of his reason for missing work. In this case, social skills training was used to teach a more acceptable alternative. By modeling the correct behavior and having the student repeatedly practice the behavior, subsequent telephone calls to his employer were more appropriate and socially acceptable.

In school situations, students may need to be taught social skills such as complimenting others, requesting assistance, and asking questions. By modeling appropriate behavior and reinforcing students for more effective performance, many socially appropriate alternatives can be established and strengthened.

**Differential Reinforcement**

When formal and specifically directed behavior management approaches are necessary, differential reinforcement procedures are recommended for initial program efforts. Two differential reinforcement procedures that may be useful in classroom situations are: 1) differential reinforcement of alternative behavior (DRA) and 2) differential reinforcement of low rate behavior (DRL).

Differential reinforcement of alternative behavior (DRA) is similar to the procedures recommended in the previous section on teaching social skills. To appropriately use DRA, the following steps are recommended.

1. Specifically define the problem behavior.
2. Specifically identify and define an alternative behavior that preferably is incompatible with the problem behavior.
3. Measure both behaviors before and during program.
4. Determine effective reinforcers.
5. Reinforce alternative behaviors(s) and ignore the problem behavior.
6. Fade reinforcers as the problem behavior decreases and the alternative increases.

With DRA procedures, the teacher is combining an extinction contingency (withholding of reinforcers for the inappropriate behavior) with reinforcement contingencies for appropriate behaviors. This combination is potentially powerful in a variety of different settings. However, in some cases it may be difficult to ignore inappropriate behaviors. As a result, many reduction programs involve punishment contingencies as well as reinforcing contingencies.

Differential reinforcement of low rate behaviors (DRL) consists of the selective reinforcement of a student for emitting no more than a prespecificed number of responses in a specific time period. Gradually this number would be reduced until the behavior occurred at an acceptable level. This procedure is recommended for behaviors that are defined as problems primarily on the basis of frequency/rate of occurrence. For example, sharpening a pencil may be tolerable once or twice in a class period, but intolerable at high rates (e.g., 10 times per hour). With this behavior problem, the goal would be to differentially reinforce lower rates of this behavior until

it was no longer considered problematic. To use DRL effectively, the following procedural steps are recommended:

1. Specifically define the target behavior (e.g., pencil sharpening).
2. Measure the behavior before and during the program.
3. Determine effective reinforcers.
4. Decide on time length of the initial DRL contingency.
5. Determine the specific DRL contingency (recommend that this initial contingency require a frequency of pencil sharpening slightly below baseline performance in order for reinforcement to be delivered).
6. Based on the student's success, systematically reduce the tolerable level of pencil sharpening that is required for reinforcement.
7. Continually reinforce the student for other appropriate behaviors.
8. When the pencil sharpening behavior has been reduced to an acceptable level, fade the DRL contingencies.

Advantages of this procedure are: (a) DRL is basically a positive approach, (b) DRL allows for gradual reduction and shaping of more appropriate behavior, and (c) staff may be more receptive to using a positive procedure for reducing inappropriate behavior. Potential difficulties of DRL procedures are: (a) the focus is primarily on the inappropriate behavior, (b) inappropriate behaviors are reinforced, and (c) for certain behaviors, the time it takes to significantly reduce the behavior(s) may be too lengthy. However, if DRL is reserved for behaviors that are excessive only in frequency, this procedure can be a highly effective and positive way to assist students to learn appropriate behavior.

**Time-Out**

This technique is "a punishment procedure in which access to positive reinforcement is withdrawn for a certain period of time" (Kazdin, 1980, p. 368). Time-out from reinforcement can be accomplished by either removing the individual from sources of reinforcement or by removing the reinforcement from the individual. According to Gast and Nelson (1977), the following procedural steps are recommended for appropriate use of time-out:

1. Identify the reinforcers that are maintaining the inappropriate behavior(s).
2. Explicitly state the time-out contingency before time-out is implemented.
3. Use milder forms of time-out (e.g., contingent observation and exclusion) before using seclusion time-out.
4. Develop written statement of the procedures to be followed.
5. Specifically identify behaviors that will result in time-out and those that will result in a warning.
6. If the student engages in the specified inappropriate behavior(s), the teacher should state the contingency and carry out the procedure in a non-emotional manner.
7. The duration of time-out should be short (time-out durations of less than 15 minutes are usually effective; lengthier time-outs are questionable).
8. The release from time-out should be made contingent upon student's behavior in time-out.
9. If seclusion time-out is considered, consult a behavioral specialist for assistance.

10. Detailed records should be kept regarding when time-out is implemented and the frequency of the targeted inappropriate behaviors.
11. Differential reinforcement of more appropriate behaviors should always accompany a time-out contingency.

Time-out has been used effectively to reduce aggressive behavior, stereo-typical behavior, classroom disruption, non-compliant behavior, and inappropriate social behavior. If the above procedural guidelines are followed, time-out provides the trainer with an effective reduction procedure that can be implemented with efforts to increase alternative appropriate behaviors.

**Response Cost**

According to Kazdin (1980), response-cost is "a punishment procedure in which a positive reinforcer is lost or some penalty is invoked contingent upon behavior" (p. 365). The key difference between response-cost and time-out is the fact that time-out is time dependent and response-cost is not. Response-cost has been used effectively with a variety of inappropriate behaviors. For response-cost to be used most effectively the following basic guidelines are suggested:

1. Specifically define the target behavior(s).
2. Conduct continuous measurement of the target behavior(s).
3. Identify effective reinforcers.
4. The response-cost contingencies should be briefly explained to the student.
5. The amount of the fines should be reasonable (baseline data should be evaluated to determine size of fines).
6. The fines that are imposed should be valued by the student.
7. Response-cost must occur consistently and as quickly after the target behavior as possible.
8. An earning system should be instituted to ensure that the student is reinforced for appropriate behavior.
9. A system for fading the program contingencies should be specified.
10. A program monitoring system should be in effect.

Response-cost results in rapid reduction of particular behaviors and the effects are relatively long lasting if the contingencies are combined with reinforcement of alternative behaviors. Potential difficulties with response-cost are that implementation of the contingencies may result in aggression and/or escape behaviors by some students. However, if this procedure is combined with other positive approaches, these problems can be minimized.

**Presentation of Aversive Consequences**

Although time-out and response-cost have been defined by Kazdin as punishment procedures, these techniques have usually been considered "positive" punishment procedures. On the other hand, presentation of aversive consequences (PAC) is commonly referred to as "negative" punishment. Examples of PAC are verbal reprimands and corporal punishment (e.g., spanking). Common to each of these procedures is that an aversive event is applied to a student contingent upon that person exhibiting a target behavior.

It is recommended that more positive reductive techniques be explored prior to considering PAC. Certainly, if PAC is the treatment choice, the program's development and implementation should be carefully monitored by appropriate review

committees. According to Sulzer-Azaroff and Mayer (1977) the following implementation guidelines are suggested to maximize the effectiveness of PAC approaches:

1. Arrange environment to inhibit escape except via acceptable alternative behavior.
2. Apply consistently.
3. Apply immediately.
4. Maximize intensity of aversive stimulus.
5. Combine with extinction.
6. Combine with reinforcement of alternative behaviors.
7. Communicate the rules of punishment contingency.
8. Utilize safety precautions.

Chief advantages of PAC are the immediacy of behavior change and the long-lasting effects of the treatment. However, punishment contingencies are easily discriminated and the reliance on these procedures may result in avoidance, escape, and aggressive behaviors. PAC procedures also provide students with models of inappropriate behavior. Given the potential problems of PAC contingencies, these procedures should be used only after other lesser intrusive efforts have failed. When used, PAC procedures must be carefully monitored and frequently reviewd.

**Self-Management**

Self-management refers to a variety of procedures that have been used to facilitate the occurrence of more desirable behavior by self imposing certain environmental arrangements, observation methods and contingent consequences. The result of using self-management procedures is the demonstration of self control. Thoresen and Mahoney (1974) propose the following definition of self control:

> A person displays self control when in the relative absence of immediate external constraints, he engages in behavior whose previous probability has been less than that of alternatively available behaviors. (p. 12)

In a classroom situation involving large numbers of students and relatively sophisticated equipment (e.g., power drills, computers, word processors, etc.) students must behave appropriately and the need for a high degree of self control is obvious. Unfortunately many students lack such self control and require more directive efforts to establish these skills. Several self-management skills that have resulted in greater self control with non-handicapped and special needs students are described below. Special attention is given to methods by which the vocational education teacher can promote this skill development in his/her students.

*Environmental arrangement.* If specific antecedent events are frequently associated with problem behaviors, the teacher can assist the student in developing better self-management by pointing these out and teaching the student how to rearrange the environment in a more constructive manner.

For example, absenteeism in the afternoon may be frequently associated with leaving the school grounds at lunch, tardiness may be associated with going outside for a cigarette between classes and verbal aggression may be associated with one's seating arrangement next to an antagonist. By identifying these antecedents and assisting students to better self manage by staying at school for lunch, not smoking between classes, and selecting a different seat, the previous behavior problems may be alleviated.

*Self observation.* A critical element of self-management procedures is to make the student more aware of his/her behavior. If students are taught how to self record

or self monitor their own behavior, this awareness is assured. In many cases, this procedure has resulted in significant reduction in problem behaviors. To assist a student to self record, the behavior must be identified and he/she must be encouraged to carry a form on which every occurrence of the target behavior is to be recorded. From time to time, the instructor should also monitor the target behavior and provide feedback on the accuracy of the student's self recording.

For example, a student could be taught to self record each instance of swearing by making a tally on a piece of paper. By making this student more aware of his/her swearing behavior, the student may develop better self control.

*Self reinforcement.* With this self-management procedure, the student is taught to self deliver reinforcers contingent on the occurrence of specific target behaviors. These reinforcers may be social praise statement, tokens, or activities. Target behaviors for self reinforcement would be those socially appropriate alternatives to specific behavior problems. Example behaviors are attendance, punctuality, compliance, cooperation, etc. If punctuality was selected as a target behavior, the student could self deliver a check mark (token) on a piece of paper and later redeem these for a self determined reinforcer (e.g., five consecutive check marks=one milkshake).

An advantage of all self-management procedures is that students must take a greater responsibilty for their actions. Further, if students learn to better self manage, these skills may assist them in future school situations and in non-school settings (e.g., employment sites).

**Behavior Contracting**

The behavior contract is an excellent format for establishing the mutual responsibilities of all persons who participate in a behavior management program. Recommended components of the behavior contract are as follows:

1. Select one or two target behaviors.
2. Operationally define behaviors.
3. Specify mutual responsibilities.
4. Identify rewarding consequences.
5. Write in simple terms.
6. Document behavior recording system.
7. Signature of all participants.
8. Provision for revising.
9. Time limits specified.

The behavior contract promotes consistency of program implementation by stating all responsibilities in writing. By requiring signatures, a more formal commitment to conditions should result in more successful program efforts. In Figure 5, an example Behavior Contract is provided. This format is applicable across a wide variety of behavior problems and program procedures.

**Commonly Encountered Problems and Solutions**

As mentioned in the introduction of this paper, absenteeism, tardiness, noncompliance, bizarre and stereotypical behavior, verbal agression, and physical agression are behavior problems that are encountered in many school settings. These behaviors detract from a student's ability to benefit from vocational education and would certainly impair one's success in an employment situation. Each of these behavior problems is briefly described and an example program presented. These examples are indicative of various approaches that have been successful in school

## CONTRACT

This agreement specifies the mutual responsibilities that Mrs. Jones, Resource teacher, Mr. Smith, Building Trades instructor, George Allen, student, and Mr. and Mrs. Allen, parents, have agreed upon for a program to increase George's attendance in the Building Trades class. Specifically, the goal of this program is to increase George's attendance for the entire Building Trades class from 1:00 P.M. to 2:00 P.M. Monday through Friday.

Each day as George prepares to leave the Resource room Mrs. Jones will furnish him with a prepared form which he will take to the Building Trades class. After class, George will present the form for Mr. Smith to initial, verifing that George was in attendance the entire period. George will then return the form to Mrs. Jones who will record the verification by a tally on a 3" X 5" card and date it.

At the end of the school day George will take the form home to his parents. Mr. and Mrs. Allen will sign the form and discuss in a positive manner the events of the class with George. George will return the form to Mrs. Jones the next school day.

When George has followed all the above procedures for five consecutive days, Mr. and Mrs. Allen will allow him to buy a record of his choice from a local music store.

Mr. and Mrs. Allen agree to take each other out to eat at one of their favorite restaurants if they meet their contract commitments for two weeks.

All parties agree to attend a bi-monthly progress meeting to be held in the Resource room at 8:15 A.M. on Friday mornings. When George has attended 19 of 20 consecutive class sessions the program will be reevaluated. At anytime this working agreement may be revised by mutual agreement of all parties.

We all have read and agree to the above responsibilities:

Betty Jones, Resource room teacher: _____

Dave Smith, Building Trades instructor: _____

Sam Allen, Father: _____

Gloria Allen, Mother: _____

George Allen, Student: _____

**Figure 5 Behavior Contract**

and other community settings involving special needs and regular education students.

**Absenteeism**

Absenteeism refers to missing scheduled events such as school, class sessions, and work experiences. This behavior problem poses difficulty for school administrators, teachers and employers. Ultimately, high absenteeism would create severe problems for the special needs student. (See Figure 6 for example program)

**Tardiness**

Tardiness or being late for scheduled events is another problem that is frequently encountered in school and vocational settings. Since this problem may be disruptive in school and costly on the job, intervention in this area is often warranted. (See Figure 7 for example program)

**Non-compliance**

Non-compliance refers to failure to follow instructions properly or quickly enough. In school this is disruptive to the classroom routine and detracts from the learning experience. In an employment setting, this may be viewed as insubordination and be sufficient reason for dismissal. (See Figure 8 for example program)

**Bizarre and Stereotypical Behavior**

Bizarre and stereotypical behaviors include a variety of actions that are easily identifiable by their atypical nature. Example behaviors include talking to oneself or imaginary others, excessive body rocking, and self injurious actions such as chronic scratching. These behaviors may be so socially disruptive that maintenance in regular classroom situations and/or employment settings becomes difficult. (See Figure 9 for example program)

**Verbal Aggression**

Verbal aggression includes obscene statements, threats, and other negative comments that may be directed toward teachers and/or fellow students. Verbally aggressive statements are usually delivered in a loud and demonstrative manner. These behaviors are highly disruptive in the vocational education classroom and would pose significant problems in any employment setting. As a result, high priority must be given to programs designed to reduce these problems. (See Figure 10 for example program)

**Physical Aggression**

Physical aggression toward teachers and/or fellow students is probably the most severe behavior problem encountered in public school settings. Recently, several reports have suggested that these problems may be increasing. Also, expulsion and suspension policies have been widely criticized as being inappropriate for special needs students. Further, the use of corporal punishment and other aversive procedures have been restricted. As a result of these developments, teachers may be faced with more severe behavior problems and will need acceptable and effective means by which to manage these behaviors. (See Figure 11 for example program)

**Monitor Program and Evaluate Effectiveness**

All behavior management procedures must be carefully monitored to ensure that the rights of students are protected and that the programs are being appropriately implemented. When punishment contingencies are being used, the monitor must

be professionally skilled and sensitive to ethical/legal ramifications of his/her actions. In these cases, formal review committees should be established.

For program monitoring and evaluation to be conducted in a responsible manner, data based decision making is important. Graphic displays of data result in the presentation of information in a manner that promotes ease of understanding. If data are made more understandable, it is more probable that this information will be used more effectively for decision making. In Figure 12, a sample graph of attending behavior is presented.

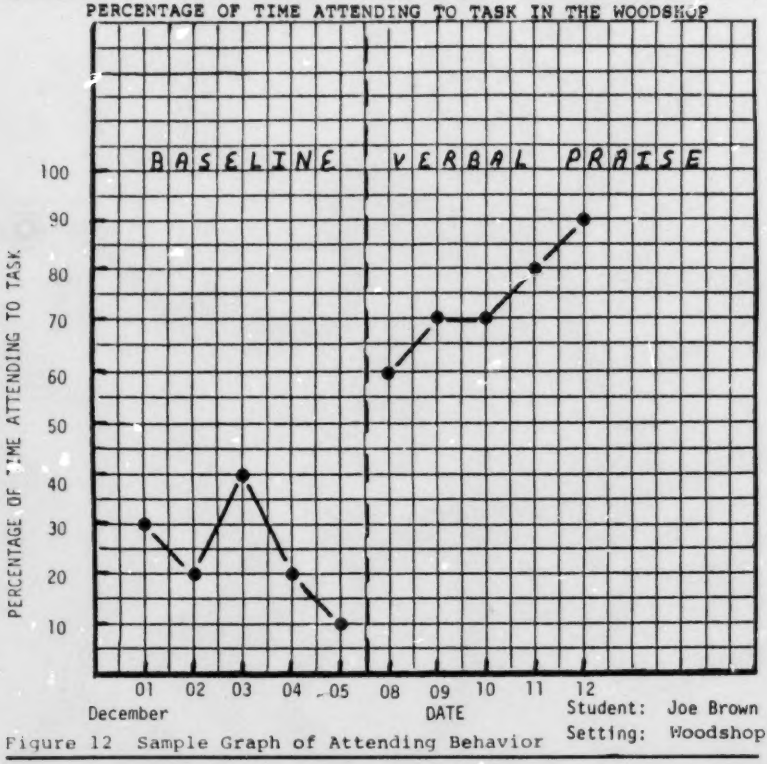


Figure 12 Sample Graph of Attending Behavior

## CONCLUSION/SUMMARY

Behavior management involves both the encouragement of social behavior and the reduction of inappropriate behavior. Initially, teaching efforts should be directed at identifying socially acceptable alternatives. If these efforts are unsuccessful, additional procedures that are specifically directed at the inappropriate behavior may be warranted.

Essential components of all behavior management programs include behavioral definitions, measurement procedures, reinforcement for alternative behaviors, specific program procedures, and a mechanism for evaluating/monitoring program results. When reductive procedures are necessary, the least intrusive (e.g., most

positive) approach should be tried prior to considering more aversive methods. The behavior contract is highly recommended as a program component that assures student involvement and clarification of all program procedures.

Finally, the authors of this monograph caution the reader about using this material as a "cookbook" for behavior management. The text, reference list, glossary (Appendix A), and annotated bibliography (Appendix B) are intended to provide basic information and practical ideas. Additional reading and consultation with behavior management specialists are highly recommended.

## References and Suggested Readings


Alberto, P.A., & Troutman, A.C. *Applied behavior analysis for teachers: Influencing student performance.* Columbus, Ohio: Charles E. Merrill, 1982.

Deitz, S.M. An analysis of programming DRL schedules in educational settings. *Behaviour Research and Therapy,* 1977, *15,* 103-111.

Deitz, S.M., & Repp, A.C. Decreasing classroom misbehavior through the use of DRL schedules of reinforcement. *Journal of Applied Behavior Analysis,* 1973, *6,* 457-463.

Doleys, D.M., Wells, K.C., Hobbs, S.A., Roberts, M.W., & Cartelli, L.M. The effects of social punishment on noncompliance: A comparison with timeout and postive practice. *Journal of Applied Behavior Analysis,* 1976, *9,* 471-482.

Harris, V.A., & Sherman, J.A. Use and analysis of the "good behavior game" to reduce disruptive classroom behavior. *Journal of Applied Behavior Analysis,* 1976, *9,* 527-523.

Kazdin, A.E. The effects of vicarious reinforcement of attentive behavior in the classroom. *Journal of Applied Behavior Analysis,* 1973, *6,* 71-78.

Marlowe, R.H., Madsen, C.H., Bowen, C.E., Reardon, R.C., & Logue, P.E. Severe classroom behaviors: Teachers or counselors. *Journal of Applied Behavior Analysis,* 1978, *11,* 53-66.

Milby, J.B. Modification of extreme social isolation by contingent social reinforcement. *Journal of Applied Behavior Analysis,* 1970, *2,* 149-152.

Schloss, P.J., Kane, M.S., & Miller, S.R. Truancy intervention for behaviorally disordered adolescents. *Behavior Disorders,* 1981, *6,* 175-179.

Schloss, P.J., & Sedlak, R. Behavioral features of the mentally retarded adolescent: Implications for the mainstream educator. *Psychology in the Schools,* in press.

Schumaker, J.B., Hovell, M.F., & Sherman, J.A. An analysis of daily report cards and parent-managed privileges in the improvement of adolescents' classroom performance. *Journal of Applied Behavior Analysis,* 1977, *10,* 449-464.

Snyder, J.J., & White, M.J. The use of cognitive self instruction in the treatment of behaviorally disturbed adolescents. *Behavior Therapy,* 1979, *10,* 227-235.

Sulzer-Azaroff, B., & Mayer, G.R. *Applying behavior-analysis procedures with children and youth.* New York: Holt, Rinehart & Winston, 1977.

Thoresen, C.E., & Mahoney, M.J. *Behavioral self control.* New York: Holt, Rinehart, 1974.

Wilson, C.E., & Hopkins, B.L. The effects of contingent music on the intensity of noise in junior high home economics classes. *Journal of Applied Behavior Analysis,* 1973, *6,* 269-275.

STUDENT: George Allen
CLASS: Building Trades
(1:00-2:00 daily)

TEACHER: Mr. Smith
DATE: 11/9/82

BACKGROUND: One of George's mainstreamed classes is Building Trades. When he attends he performs satisfactorily, however, his irregular attendance has Mr. Smith concerned. During the past six weeks, George has missed 18 class periods or an average of three per week. This attendance pattern not only has Mr. Smith concerned but also Mrs. Jones, the Resource teacher for the building.

BEHAVIOR PROBLEM DEFINITION: Absenteeism - Missing more than 50% of a scheduled class period (i.e. Building Trades class).

SPECIFIC PROGRAM OBJECTIVE: By the end of the semester (December 20), George will have attended 95% of the Building Trades classes during the preceding month (i.e. 19 of 20 classes).

MEASUREMENT PROCEDURES: A simple system of frequency data recording will be used. Mrs. Jones will record a tally on a 3" X 5" card on her desk for the days George attends class.

MANAGEMENT PROCEDURE: A behavior contract will be used to increase George's attendance to the Building Trades class. The procedure to be employed will include George taking a form to Mr. Smith for him to initial to verify his attendance. George will then return the form to Mrs. Jones for her to record. After the school day George will take the form home for his parents to sign and then he will return it to Mrs. Jones the next school day. This procedure will continue until George has met the specific program objective. (See Figure 5 for the specific behavior contract)

**Figure 6 Sample Program Format - Absenteeism**

STUDENT: 17 Eight Graders
CLASS: Industrial Arts

TEACHER: Mr. Fitzpatrick
DATE: November 21, 1962

BACKGROUND: Mr. Fritzpatrick has had many requests by his students to take a field trip to a community wood working shop. However, he has become disturbed lately by the high frequency of tardiness by several students in his class. The students in Industrial Arts work in pairs on various projects in the classroom. Thus, it is necessary for each member of the class to arrive on time so as not to interfere with the work of his/her partner.

BEHAVIOR PROBLEM DEFINITION: Tardiness - Entering the classroom after the bell.

SPECIFIC PROGRAM OBJECTIVE: The 17 eighth graders in Industrial Arts will arrive on time for class 100% of the time for two consecutive weeks.

MEASUREMENT PROCEDURES: The number of students tardy and prompt is counted each day. The baseline is then calculated by finding the average percentage of students arriving on time for the week. This same procedure will be followed during the management program.

MANAGEMENT PROCEDURES: Mr. Fitzpatrick will inform his class that they will be taking a field trip to the community wood working shop contingent on there being no tardiness for two consecutive weeks. He knows that it will be difficult for all students to arrive on time at first. So, Mr. Fitzpatrick will not require 100% punctuality the first week, but a percentage slightly higher than baseline. Each successive week will require still higher percentages of punctuality until 100% is achieved. At the beginning of each week the required percentage will be posted on the front board.

**Figure 7 Sample Program Format - Tardiness**

STUDENT: George Alexander TEACHER: Mrs. Sozen
CLASS: Typing I (9:00-9:50 daily) DATE: 11/4/82

BACKGROUND: George has posed management problems in Typing I class by his failure to begin assignments promptly. This has resulted in Mrs. Sozen repeating her instructions several times and taking away from her time with other students. On six occasions over the past two months, Mrs. Sozen has sent George to the office for not cooperating in class.

BEHAVIOR PROBLEM DEFINITION: Non-compliance - Failure to initiate teacher request within 15 seconds of command.

SPECIFIC PROGRAM OBJECTIVE: By the end of the current semester (December 20), George will comply to 90% of the teachers directions within 15 seconds of the command.

MEASUREMENT PROCEDURES: Frequency recording will be used to measure George's non-compliant and compliant behavior. Mrs. Sozen will record a (+) or a (-) on the form kept at her desk. A (+) will denote those times George initiated Mrs. Sozen's request within the 15 second time period while a (-) represents those times he did not. This information will then be transformed into percentages for graphing. During the first week, baseline data will be obtained.

MANAGEMENT PROCEDURES: During the second week, the management procedures of graphic feedback and social reinforcement will begin. At the beginning of the second week, a conference will be held with George to discuss his baseline data and the proposed program. The program will consist of showing George his graph at the end of each class. A mutually agreeable rate of increase of compliant behavior will be selected as the week's "target". George will be told that if he reaches this "target" (averages that rate), he will earn free-time for the last half of the class on Friday. Activities during free time would include free study, free reading, a pass to the gym, or free game playing.

This procedure will continue with the agreed upon "target" level being increased each week until 90% compliant behavior is obtained and maintained for one month.

**Figure 8 Sample Program Format - Non-compliance**

STUDENT: Sally Aherns TEACHER: Mrs. Phillips
CLASS: Child Care II (9:00-10:00 daily) DATE: November 12, 1982

BACKGROUND: Mrs. Phillips is concerned because Sally has been displaying unusual scratching in her classroom. This occurs almost constantly and is quite annoying to Mrs. Phillips and the rest of the class. She is also concerned as to what others outside the school setting will think of this unusual behavior and limitations it will place on Sally's employment possibilities.

BEHAVIOR PROBLEM DEFINITION: Stereotypical behavior of scratching - Rubbing the fingernails of either hand against the hands, arms, or legs.

SPECIFIC PROGRAM OBJECTIVE: By the end of the semester (December 20), there will be no incidents of Sally's scratching behavior observed in 80% of the intervals recorded on six consecutive days.

MEASUREMENT PROCEDURES: To record Sally's scratching behavior momentary interval sampling will be used. Recording will occur on three teacher selected days of the week for the entire class period. To facilitate teacher convenience, the class period will be divided into ten five-minute intervals. On the selected days, Mrs. Phillips will look at Sally at the end of each five-minute interval to observe if Sally is scratching at that moment. If Sally is observed scratching a (+) will be recorded in the appropriate blank on the form. If no scratching is noted at the end of the interval a (-) will be recorded. Sally will be unaware as to which days are being recorded. Baseline data will be collected during the first two weeks (six days).

MANAGEMENT PROCEDURES: The management procedure involving graphic display feedback will begin the third week. On Monday of the third week of class Mrs. Phillips will hold a conference with Sally to explain the baseline data as well as to discuss her concerns regarding the scratching behavior. Sally will be told of the recording procedure, emphasizing that she will not know which three days of the week Mrs. Phillips is recording. It will also be explained that Sally is to come to Mrs. Phillips at the end of each class period to transfer the data into chart form as well as to discuss the results with Mrs. Phillips. This chart will be kept at Mrs. Phillip's desk to ensure completion, but be available for Sally to review at any time. This procedure of data recording, conferences and Sally graphing the data will continue until the specific program objective is met.

**Figure 9 Sample Program Format - Stereotypical behavior**

STUDENT: Tom B. TEACHER: Mrs. Feldman
CLASS: Basic Vocational (Assembly) DATE: 11/20/82

BACKGROUND: Tom and two of his peers work on multiple assembly bagging at a group table in the back of the classroom. Tom must wait for Steve to hand him some parts before he can complete his task. Tom has been yelling/demanding Steve to hurry before allowing Steve to complete his job. Tom is disrupting the necessary cooperative work involved with the multiple assembly bagging task. He must learn to wait quietly and patiently for his coworker to complete his task before beginning his own job.

BEHAVIOR PROBLEM DEFINITION: Verbal aggressive behavior - During multiple assembly bagging, Tom directs negative statements in a loud voice (can be heard across the room) to his assembly partner(s).

SPECIFIC PROGRAM OBJECTIVE: Tom will refrain from yelling/demanding for his coworker to hurry 100% of the time for two consecutive weeks during multiple assembly bagging.

MEASUREMENT PROCEDURES: The frequency of yelling/demanding during the 30 minute multiple bagging session will be recorded on a wrist counter and totaled at the end of the session on a classroom data sheet. One week of baseline will precede the management procedure.

MANAGEMENT PROCEDURES: Immediately after Tom yells/demands, Mrs. Feldman leads him back to his desk and says, "You cannot stay here if you yell or demand." Tom is left at his desk for two minutes. When the time is up, Tom is taken back to the group table to resume his job. Cooperative work is frequently (every five minutes) reinforced with comments such as, "I like the way you are all working together."

**Figure 10 Sample Program Format - Verbal aggressive behavior**

STUDENT: Sally G. TEACHER: Mr. Peterson
CLASS: Time-telling DATE: November 27, 1982

BACKGROUND: For the past two weeks, Mr. Peterson has been instructing a class on time-telling to four of his elementary grade school students. Sally has begun to demand the use of Mr. Peterson's instructional clock. She will say, "I want the clock" if her demands are not met after three requests, she will reach out and pinch Mr. Peterson on the arm. Sally's behavior is socially unacceptable and injurious to her teacher. Aggressive pinching behavior is usually preceded by three demands for instructional materials ("I want the clock").

BEHAVIOR PROBLEM DEFINITION: Physically aggressive behavior will be defined as any instance of pinching the arms or hands of Mr. Peterson during the time-telling sesison.

SPECIFIC PROGRAM OBJECTIVE: Sally will refrain from pinching her teacher 100% of the time during the 30 minute time-telling session for three consecutive weeks.

MEASUREMENT PROCEDURES: A baseline measure of the frequency of pinching will be collected during the time-telling session for two weeks. Each occurrence of pinching will be recorded as a tally mark on a daily data sheet. During the management program, Sally will have a chart on her desk for each of the days of the week. Each time Sally pinches she will place a check mark in the appropriate box.

MANAGEMENT PROCEDURES: Since Mr. Peterson has noted the antecedent behavior of Sally demanding, "I want the clock" for three consecutive times prior to pinching, he will intervene after the first demand. Mr. Peterson will explain to Sally that pinching is not allowed and if she does not pinch then she may have 5 minutes with the clock to work with a peer at the end of the day. At the end of the week, if she has two or less checks, Mr. Peterson will work individually (1:1) on time-telling with Sally for 10 minutes.

Figure 11 Sample Program Format - Physical aggressive behavior

## APPENDIX A
## GLOSSARY OF TERMS

*Alternate Response Training*—The teaching of a substitute/replacement behavior which is incompatible with an inappropriate behavior.

*Aversive Events*—An unpleasant event used to decrease inappropriate target behaviors.

*Back-up Reinforcer*—A desired object, event, or activity which can be bought with tokens.

*Baseline*—The frequency or intensity of a targeted behavior prior to initiating a behavior management program.

*Behavior*—All observable and measureable actions of an individual.

*Contingency*—The relationship of a behavior and the consequences which follow (an "if, then" relationship).

*Contingency Contracts*—A written agreement of all participants specifing the procedures to be implemented as a part of a behavior management program.

*Continous Reinforcement*—A schedule of reinforcement in which all occurrences of a selected behavior are reinforced.

*Differential Reinforcement*—A simultaneous reinforcement of one kind of behavior and not another.

*Extinction*—The nonreinforcement of previously reinforced behavior.

*Functional Relationship*—A systematic change in the target behavior due to the program procedure.

*Group Contingencies*—A contingent relationship between the behavior of a group of individuals and specific consequences.

*Incompatible Behavior*—A behavior that cannot be performed at the same time as another behavior.

*Intermittent Reinforcement*—A reinforcement schedule in which only a portion of responses are reinforced.

*Modeling*—A teaching strategy in which the teacher demonstrates the desired behavior.

*"Naturally Occurring" Reinforcers*—A reinforcer which is naturally found in the environment and is the direct result of the behavior (e.g., raising hand in class and being called on by the teacher).

*Negative Reinforcer*—A stimulus, that when terminated or reduced, results in an increase of the preceding behavior (e.g., buckling a seat belt is reinforced by termination of a buzzer).

*Positive Reinforcer*—A stimulus (e.g., object, event or activity) which increases the behaviors that it follows.

*Premack Principal*—The description of a relationship in which higher frequency behaviors are used to reinforce lower frequency behaviors (e.g., television watching can reinforce homework completion).

*Punishment*—A procedure in which a behavior is reduced by the contingent presentation of an aversive event or the contingent termination of a positive reinforcer.

*Reliability of Assessment*—The term used to refer to the consistency of measurement between two independent observers of the same behavior.

*Response-Cost*—A reductive procedure in which previously earned reinforcers are lost as the result of an unwanted behavior.

*Self Control*—A self-management procedure in which the individual consciously alters his behavior.

*Self-Instruction*—A self-control strategy in which the individual directs his behavior by providing self-instruction or guidance.

*Self-Observation*—A self-control technique in which the individual records his own behavior.

*Self-Reinforcement*—Refers to the individual providing himself with reinforcing events contingent on performance of specific target behaviors.

*Social Reinforcement*—Reinforcers which result from interactions with other individuals such as smiles.

*Target Behavior*—The behavior to be changed during a behavior management program.

*Time-out from Reinforcement*—A reductive procedure in which the individual is removed from sources of reinforcement for a specific time period contingent on a target behavior.

*Token*—A reinforcer to be later exchanged for a reinforcing object or event. Checks marks, stars or poker chips are commonly used as tokens to be later exchanged into specified privileges or activities.

## APPENDIX B
## ANNOTATED BIBLIOGRAPHY

Dietz, S.M. An analysis of programming DRL schedules in educational settings. *Behavior Research and Therapy*, 1977, *15*, 103-111.

Three methods of programming differential reinforcement of low rates of responding (DRL) schedules are explained and each illustrated with a study by the author.

The first procedure, Spaced Responding DRL, administers reinforcement of a response when that response follows the previous response by a minimum amount of time (the inter-response time). This method was effective in reducing inappropriate questioning by three children enrolled in a self-contained class of ten children diagnosed as behaviorally disturbed.

Full Session DRL is described as a procedure of providing reinforcement contingent on an average rate of responding. Thus, it is used to lower the rate of responding over an entire session. The study illustrative of this method was effective in reducing talk-outs by a 15 year old Educable Mentally Retarded male enrolled in a public school special class.

Interval DRL is the third method defined and studied by the author. This procedure is described as being similar to Spaced Responding DRL in that both reduce rates of responding by separating responses by some amount of time. However, with this method there is an average, rather than a discrete inter-response time. The author was successful in reducing talk-outs in a study that involved a six year old first grade female enrolled in a public school.

Finally, the results of the three studies are discussed as well as suggestions for the applied practitioner. However, the comparative effectiveness of the three types of DRL is not analyzed.

Dietz, S.M., & Repp, A.C. Decreasing classroom misbehavior through the use of DRL schedules of reinforcement. *Journal of Applied Behavior Analysis*, 1973, *6*, 457-563.

The authors present three studies to demonstrate the efficacy of differential reinforcement of low-rates of responding (DRL). This method involves using positive reinforcement to reduce behavior.

The subject of Experiment I was an 11 year old trainable mentally retarded boy in a special classroom. The behavior to be reduced was the number of talkouts during a 50 minute session. The three phases included a baseline, treatment, and return to baseline. Treatment consisted of allowing the boy five minutes of playtime at the end of a 50 minute session contingent on three or fewer talkouts. The results showed that the boy emitted an average 5.7 talkouts during the first baseline phase and only .93 during the treatment.

The second experiment used ten TMR students in a special class at an elementary school. Experiment II was essentially the same as Experiment I with the exception that an entire class was involved in the program and candy was used as the reinforcer. Again the results demonstrated a significant drop in the number of talkouts during treatment.

The final experiment exemplifies the efficacy of the DRL schedule when used to reduce verbal behavior of a group of high school students in a regular education Office Procedures class. A free day at the end of the week was provided contingent upon a reduced number of subject changes (a change in topic from the ongoing academic discussion) during the first four days of the week. This study contained six phases: phases one and six were baseline while phases two through five required successive reductions of subject topic changes prior to reinforcement (free day).

Doleys, D.M., Wells, K.C., Hobbs, S.A., Roberts, M.W., & Cartelli, L.M. The effects of social punishment on noncompliance: A comparison with timeout and postive practice. *Journal of Applied Behavior Analysis*, 1976, 9, 471-482.

The authors examined the effects of social punishment, positive practice, and timeout on the noncompliant behavior of four mentally retarded children. Social punishment was defined, essentially, as the experimenter verbally reprimanding the subject for noncompliance followed by a silent "glare". Positive practice consisted of the experimenter manually guiding the subject through part or all of the commanded task. Timeout involved isolation of the subject in a corner for a 40-second period within the experimental setting.

Baseline conditions preceded and followed each experimental condition. A multi-treatment experimental design was devised that allowed for the study of the effects of social punishment when it was preceded by none, one, or both of the other experimental procedures.

The results indicate that social punishment can effectively reduce noncompliance. Social punishment also appeared to be relatively more effective than the timeout and positive practice techniques used. Considerations for the use of social punishment is discussed as well as the advantages of social punishment over other punishment techniques.

Harris, V.W., & Sherman, J.A. Use and analysis of the "good behavior game" to reduce disruptive classroom behavior. *Journal of Applied Behavior Analysis*, 1976, 9, 527-532.

This article describes a study conducted to ascertain the effectiveness of the "Good Behavior Game" in reducing disruptive classroom behaviors (talking and out of seat behavior). Conducted in two elementary classrooms (fifth and sixth grades) during a portion of the day, the study addressed three questions: 1) Would the game reduce disruptive behavior in different classrooms?, 2) If so, which components of the game were responsible?, and 3) What would be the effect on academic performance?

The answer to the first question was yes, the Good Behavior Game reduced disruptive behavior in both classes. Reductions as much as 80% resulted from the use of the game.

As a result of manipulating the components of the game, the researchers were able to answer the second question. The results indicated that division of the class into teams, reinforcement for a team winning, and the criteria set for winning were the effective components of the game.

In response to the third question, only slight improvement in academic perform-

ance was found. Another positive aspect of the game, in addition to it's powerful effect on reducing disruptive behavior is that it is easily implemented by teachers. It does not require the teacher to differentially attend to each student with reinforcement or consequences, nor does it have a complex, time consuming data-collection component.

Kazdin, A.E. The effects of vicarious reinforcement on attentive behavior in the classroom. *Journal of Applied Behavior Analysis*, 1973, *6*, 71-78.

The author investigated the effect of reinforcement delivered to target subjects on the attentive behavior of nonreinforced adjacent peers in a classroom setting.

The method consisted of sequentially exposing two pairs of moderately retarded elementary school students to three reinforcement phases. Reinforcement was defined as verbal praise, such as, "That's really good!", or "Good, you're doing nicely!" A combined multiple baseline and reversal experimental design was used to evaluate vicarious reinforcement. Baseline rates of attentive behavior were recorded for each child. Next, praise was delivered contingent on attentive behavior to the target subject in each subject pair. After a reversal phase of no reinforcement, reinforcement for inattentive behavior was administered to the target subject. The last phase reinstated praise contingent on attentive behavior for the target subjects. At no time during the study were nontarget subjects administered direct reinforcers.

The results showed that reinforcing attentive behavior of target subjects did increase the attentive behavior of their adjacent peers, thus demonstrating the vacarious reinforcement effect. In addition, the results show that the reinforcement of the target subjects inattentive behavior also increased the attentive behavior of adjacent peers. Various explanations for the results of the study are discussed.

Milby, J.B. Modification of extreme social isolation by contingent social reinforcement. *Journal of Applied Behavior Analysis*, 1970, *2*, 149-516.

This article describes a study in which two socially isolated persons were placed on an intervention program where staff social reinforcement was contingent upon their social interactions with other individuals or staff members.

When they displayed social behavior, defined as "talking to, working with, or playing with another patient or staff member", they received social reinforcement from staff members. This social reinforcement was delivered by the staff members by "going in close proximity to, looking at, nodding to and talking with the patient in an approving manner". During this phase of the program, the social behavior of both individuals increased from means of 16% to 39% for one person (P-1) and 18% to 30% for the other (P-2).

During the second phase, social reinforcement was made contingent upon a second class of behaviors. For P-1 this was "being in the music room" and for P-2 it was "being in the pool room". This was defined as "the patient having more than 50% of his body across the threshhold" of the room.

Again, during the "contingent approval" phase, social behavior increased for both persons. For P-1 an increase from a mean of 10% to 16% resulted and an increase from a mean of 5% to 20% was noted for P-2.

These results are consistent with other studies which demonstrate the efficacy of

social reinforcement in various settings where there is limited control over other reinforcers. The applicability of this study to educational settings is particularly relevant since individual teachers do not control all student reinforcement.

Pendergrass, V.E. Timeout from postive reinforcement following persistent, high-rate behavior in retardates. *Journal of Applied Behavior Analysis*, 1972, *5*, 85-91.

The author presents a study that examined the effect of isolation (timeout) contingent on an occurrence of misbehavior without positive reinforcement of other behaviors.

Two severely retarded withdrawn boys were selected as subjects. Subject 1 demonstrated the misbehavior identified as banging and biting and Subject 2 performed the misbehavior of fiddling and jerking. The social interactions of looking, touching, speaking, and responding were also defined and observed.

The three experimental conditions consisted of baseline, treatment, and watch. During baseline, the social interactions and undesirable behaviors of the Subjects were observed in a classroom and recorded. Treatment was administered with the isolation from the class of one Subject for 2 minutes after each occurrence of one undesirable behavior. The watch condition was defined as the observed punishment of one Subject by the other.

Timeout was effective in suppressing both undesirable behaviors of Subject 1. It was pointed out that this occurred even though the experimenter always stated the punishment contingency and administered punishment contingent on one behavior. For Subject 2, treatment was only effective in suppressing the rate of the behavior that was punished.

It was found that the social interaction of looking was displayed most frequently by both Subjects. During treatment sessions, the frequency of looking increased for Subject 1 and remained the same as in baseline for Subject 2.

Schumaker, J.B., Hovell, M.F., & Sherman, J.A. An analysis of daily report cards and parent-managed privileges in the improvement of adolecents' classroom performance. *Journal of Applied Behavior Analysis*, 1977, *10*, 449-464.

This study involved three experiments, each with a specific question. Experiment I examined the effect of daily report cards and parent-managed privileges on improving adolescents' classroom performance. The results indicated that when home privileges and praise by the parents were contingent on improved school conduct, classwork, daily grades and teacher satisfaction, the school performance of the three students involved in this experiment improved.

Experiment II attempted to determine if parental praise along with the daily report card would result in improved performance. While there was improvement in one of the two students involved in this experiment, over time there was a slight decline. These results indicate that the parent-managed privileges are an important component of the system.

Experiment III was done to determine if school personnel, relatively inexperienced in using behavior management techniques, could successfully implement the system. Two guidance counselors were given a written manual describing the program

and asked to implement the program without any additional assistance. Both counselors obtained results comparable to those in Experiment I conducted by research psychologists. These results demonstrate that the daily report card system along with parent-managed privileges is an effective tool to improve student performance as well as being one which school personnel can implement without complex, time consuming instruction.